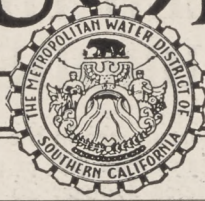


• COLORADO RIVER •
AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT



OF SOUTHERN CALIFORNIA

Vol. III.

FEBRUARY 8, 1936

No. 3



SUNSET
A Wood & Bevanda Dragline In Silhouette Against the Evening Desert Sky.

COLORADO RIVER
AQUEDUCT NEWS
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

LOS ANGELES, CALIFORNIA

Published twice monthly in the interest of Field and Office Workers on the Colorado River Aqueduct, and for the information of all other citizens of the Metropolitan Water District.

Vol. III February 8, 1936 No. 3

AN EDITOR'S LAMENT

About a year and a half ago the editor of the NEWS was moved to editorialize upon a strange phenomenon which had sprung up in the desert country being traversed by the aqueduct. The reappearance of this phenomenon of recent months inspires him to repeat verbatim what he said before. It went like this:

"The editor of the AQUEDUCT NEWS is suffering from a painful sense of guilt.

"He feels that it isn't quite fair for him to receive, read, and enjoy some of the poetic contributions which reach his desk without passing them along to the readers of the magazine. And yet (alas!) he can't pass them on. The limitations of space, unfortunately, transcend all qualms of conscience.

"He has come to the conclusion that hard-rock tunneling, somehow, is a powerful stimulant to poetic effort. How else can be explained the reams of verse which is contributed by tunnel men all the way from Whipple Mountain to Valverde?

"Some of the aqueduct poets follow stately, dignified meter; some follow the newer school, with variformed lines which sublimely fail to rhyme; some stick to good, old-fashioned doggerel. They range from couplets to cantos—and from Service to Shakespeare.

"The readers of THE NEWS don't know what they are missing, and can't know unless at least 10 more pages are added to each issue.

"So the editor sighs and grieves as he reads the penciled leaves, and hopes to thunder that the folks out yonder won't fill the air with curses because he's held out the verses.

"(Help! They've got him doing it, too.)"

* * * *

The above is reprinted now because, apparently, a new crop of poets has appeared since its original printing.

And it's breaking our heart!

CAJALCO DIVERSION TUNNEL HOLED THROUGH JANUARY 26 BY BRODERICK AND GORDON

An important step in the construction of the Cajalco dam unit of the aqueduct was completed January 26 when crews of Broderick & Gordon (subcontractor for the Griffith Company) holed through the 2,000-foot diversion tunnel which will carry the runoff around the dam site.

Sam Funsett is superintendent on the job. Records show that 187 shifts were required for excavation of the tunnel, making an average advance of 10.7 feet per shift. One hundred and seventy-two feet of the tunnel required support.

Meanwhile, crews of the Griffith Company are moving forward rapidly with other phases of the job. Progress records reveal that up to February 1, approximately 1,200,000 cubic yards of earth and rock had been moved.

Approximately 40 dump trucks are

now in use, working principally on the dike which is being built across the low rim on the north side of Cajalco basin.

A total of 510 men are now employed on various phases of the job.

Approximately a half mile long and 194 feet high, Cajalco dam will be of earth-fill construction and will form a reservoir with a capacity of 100,000 acre feet of water. Located approximately 10 miles south of Riverside, the reservoir will serve as a connecting link between the main aqueduct and the aqueduct distribution system which will carry Colorado River water to the member cities of the Metropolitan Water District.

Work on the project is going forward under the direction of Distribution Engineer R. B. Diemer. Dick Ward is resident engineer.

FIRST FOOTINGS FOR STEEL TRANSMISSION LINE TOWERS PLACED IN DANBY DRY LAKE

Construction of the Colorado River Aqueduct project was well into a major new phase this week as contractor's crews pushed forward with the placement of the first footings for the steel towers of the Metropolitan Water District's huge power transmission line between the aqueduct and Boulder Dam.

Pilings are being driven into the earth to a depth of twenty-five feet, and capped with concrete to provide a solid, lasting foundation for the ninety-five foot high steel structures which will carry the transmission cable.

District engineers point out that on other sections of the 237-mile line other types of footings will be used, the variation in method being governed by the variation in soil and other factors.

The 230,000-volt line, which ultimately will carry thirty-six per cent of all the firm power generated at the Boulder Dam power plants, will run south from the dam in the form of an inverted "Y" connecting with the five pumping plants on the aqueduct. Work on the job is being carried forward by Fritz Ziebarth, Long Beach electrical contractor, under the direction of Gen-

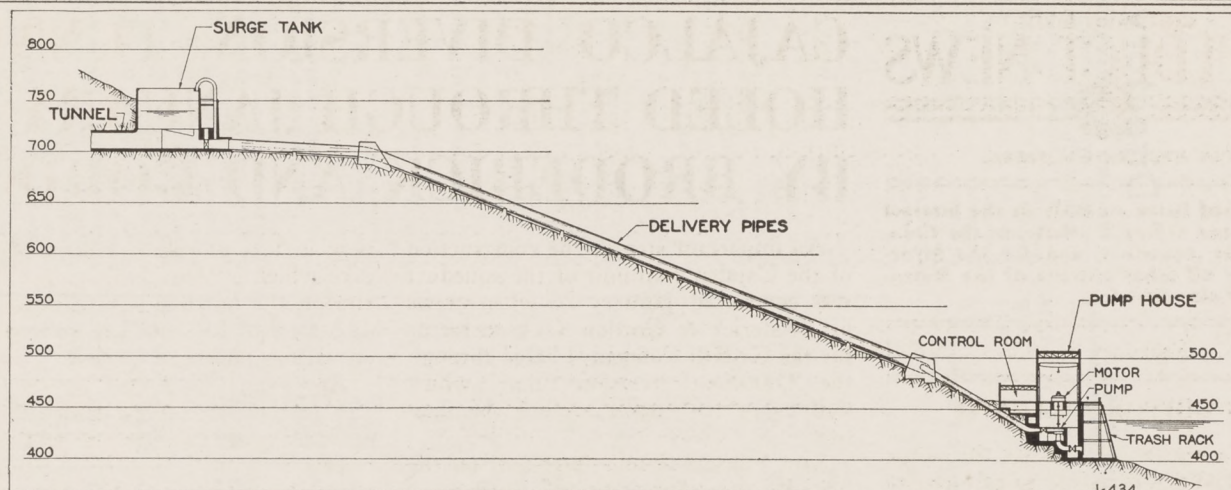
eral Manager F. E. Weymouth and Chief Electrical Engineer James M. Gaylord of the Water District.

The Danby Dry Lake, on the floor of which work is now going forward, is located approximately 250 miles northeast of Los Angeles, just above the Iron Mountain tunnel of the aqueduct project.

Meanwhile, Newbery Electric Company crews are moving ahead with the construction of the telephone lines between Boulder Dam and the aqueduct pumping plants. The line from Hayfield Junction to Hayfield lift has been completed, and work is going forward on the section between Goffs Station and Iron Mountain lift.

PIPE LINE WORK

At the Rochester plant of the American Concrete & Steel Pipe Company, on Schedules 4 and 5 of the Distribution System, the pouring of concrete rollways was completed last week. Foundation for the steel fabricating machine was finished, and the batching plant 90 per cent completed. A 42-ton travelling crane for handling the pipe was received and erected.



Profile of the Intake Pumping Installation.

DISTRICT PURCHASES FIFTEEN PUMPS FOR AQUEDUCT; CONTRACT AWARDED FOR IRON MT. PLANT

Colorado River Aqueduct equipment and construction contracts totaling \$1,281,456 were awarded last week by the District Board of Directors, acting upon the recommendation of General Manager Weymouth.

The contracts covered the purchase of fifteen centrifugal pumps, three units for each of the aqueduct's five pumping stations, for a total price of \$563,101, and the construction of the Iron Mountain pumping plant for \$718,355.

Six pumps, for the Gene and Intake plants of the aqueduct, were purchased from the Byron Jackson Company for \$215,451; three units to be installed in the Iron Mountain plant were purchased from Allis-Chalmers for \$98,300; and six units, for the Eagle Mountain and Hayfield plants, from the Worthington Pump and Machinery Corporation for \$249,350.

Acting on the recommendation of the General Manager, the Board rejected the bid of one pump manufacturer. Mr. Weymouth's report stated that tests of model pumps at California Institute of Technology showed that the company's product failed to meet specifications. All bidders submitted models which were tested at the Institute under the direction of Chief Electrical Engineer J. M. Gaylord and R. M. Peabody, senior mechanical engineer.

The contract for construction of the Iron Mountain pumping plant was awarded to the construction firm of Wood & Bevanda at the bid price of \$718,355.

Meanwhile, preparation for the con-

struction of the fourth of the five aqueduct pumping plants is being made by the District which will receive bids on the job March 13.

The work to be covered by the bidding includes the Eagle Mountain pumping plant buildings, together with inlet works, outlet structures, an electrical switching station, and other appurtenant works.

Located approximately 200 miles east of Los Angeles, the new pumping station will lift aqueduct water to the level of the east portal of the East Eagle Mountain tunnel.

Like the other four aqueduct pumping stations, the Eagle Mountain plant will be of heavy reinforced concrete construction, with modernistic architectural treatment. The building will be roofed with mission tile.

Contracts already have been awarded for three of the five plants, thus leaving only the Hayfield plant to be advertised.

All five of the pump stations will be operated with power generated at Boulder Dam and carried to the aqueduct over the new transmission line on which work is now well under way.

Aqueduct pumping will consume 36 per cent of all the firm energy generated at the dam, making the Metropolitan Water District the Government's largest single customer for Boulder Dam power.

Each pumping plant ultimately will contain nine pumping units of about 200 second feet capacity each, which will allow one spare unit.

The Intake and Gene pumping plants are located near the river and their dis-

charges will be regulated by the Gene Draw and Copper Basin reservoirs. The lift at the Intake will be 290 feet and at Gene it will be 303 feet. The next plant is at the east portal of the Iron Mountain tunnel, 69 miles along the aqueduct from the intake, and has a lift of 147 feet. As no natural storage site is available at this point, it is necessary to provide about 100 acre feet of regulatory storage in a cut-and-fill reservoir. The same condition applies at Eagle Mountain, where a lift of 438 feet is required.

The final and highest pump lift (440 feet) is located at Hayfield, 126 miles west of the intake. A natural reservoir in Hayfield Dry Lake, with a capacity of 86,500 acre-feet, will provide regulation at this point. The hydraulic grade at the top of the Hayfield lift is at an elevation of 1,807 feet above sea level, the highest on the line.

The pumps which were purchased last week are of the vertical shaft, centrifugal type and will be direct connected to vertical synchronous motors. The pumps will be located below the lowest inlet water level and the motor floor will be above the highest water level. With this arrangement, the pumps always will be primed, and there will be no danger of flooding the electrical equipment.

The vertical pump setting requires a much smaller floor space than horizontal settings. The nine pumping units which ultimately will be in each plant will be installed in groups of three, each group

(Continued on Page 8)

TUNNEL EXCAVATION (MILES)

Aqueduct	72.74	8.17
Distribution	8.07	7.64
Total	80.81	15.81

CONSTRUCTION PROGRESS

January 1, 1936, to January 31, 1936

CANAL, CONDUIT AND SIPHON (MILES)

Excavation	86.92	57.14
Concrete	67.97	75.03
Back fill	20.71	59.99

* TUNNEL LINING (MILES)

Aqueduct	27.75	72.14
Distribution	0	15.69
Total	27.75	87.83

* Arch considered to equal 0.9 of completed section.

Directory

BOARD OF DIRECTORS

Franklin W. Whitsett, Chairman	W. P. Whitsett, Vice-Chairman
S. H. Finley, Secretary	Anahelm
Beverly Hills	B. F. Hapgood
Compton	Arthur Taylor
Fullerton	J. L. Norwood
Glendale	Warren W. Butler
Long Beach	Walter Humphreys
Los Angeles	Bernard Brennan
Los Angeles	William M. Cook
Los Angeles	I. Elmer
Los Angeles	Ferry H. Greer
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Los Angeles	D. W. Pontius
Los Angeles	John R. Richards
Los Angeles	Victor H. Rossetti
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San Marino	Franklin Thomas
Santa Ana	J. H. Ramboz
Santa Monica	S. H. Finley
Torrance	W. H. Carter
	Charles H. Toll, Treasurer
	D. W. Pontius, Controller

GENERAL STAFF

General Manager and Chief Engineer	F. E. Weymouth
Asst. Gen. Mgr.	J. L. Burkholder
Asst. Chief Engineer	Julian Hinds
General Counsel	James H. Howard
Asst. Gen. Coun.	Arthur A. Weber
Asst. Controller	J. M. Luney
General Supt.	James Munn
Chief Elec. Engineer	J. M. Gaylord
Asst. to Gen. Mgr.	Don J. Kinsey
Secretary to General Manager	Elisabeth von Hagen

DIVISION ENGINEERS

Division 1	R. C. Booth
Division 2	W. E. Whittier
Division 3	John Stearns
Division 4	B. C. Leadbetter
Divisions 5 & 6	J. B. Bond
Distribution	R. B. Diemer
Transmission	C. F. Weaver

SUPERINTENDENTS

Colorado River, Copper Basin and Whipple Mt. Tunnels, Walsh Construction Co., W. A. Huntington and L. M. Ramey, Tunnel Supts.	Coxcomb Tunnel and Iron Mt. shaft, Winston Bros., E. A. Bernard, Gen. Supt.; F. T. Hillman and R. V. Johnson, Tunnel Supts.
Utah Construction Co., Ben Arp, Gen. Supt.	East Eagle Mt. Tunnel and West Eagle Mt. Tunnel, east portion, Broderick & Gordon, C. J. Kavation, L. E. Dixon and Bent Bros., P. C. Gulnn, Gen. Supt.
Cottonwood Tunnel, J. F. Shea Co., Inc., Gilbert Shea, Gen. Mgr.; Wallace Young, Master Mechanic.	Coachella Division, B. C. Leadbetter, Gen. Supt.
Fargo Adit, E. Coachella Tunnel—Dist. Force Acct., Neil O'Donnell	Pushawalla Adit, and Berdoo Aggregate plant, East Coachella Tunnel—Dist. Force Acct., John Austin.

TUNNEL PROGRESS

CONTRACTOR	TUNNEL	LENGTH IN FEET	EXCAVATION IN FEET				LINING IN FEET							
			NUMBER OF SHIFTS	AVERAGE PER SHIFT	THIS PERIOD	TOTAL TO DATE	REMAIN- ING	ARCH OR INVERT	NUMBER OF SHIFTS	AVERAGE PER SHIFT	THIS PERIOD	TOTAL TO DATE	REMAIN- ING	
AQUEDUCT—CONTRACT														
WALSH CONSTRUCTION CO.	COLORADO RIVER	5,482		Completed		5,482	0	Arch	23	238.0	0	5,475	7	
	COPPER BASIN NO. 1	705		Completed		705	0	Arch				5,475	7	
	COPPER BASIN NO. 2	11,568		Completed		11,568	0	Invert				0		
	WHIPPLE MOUNTAIN	(32,238)		Completed		(32,238)	0	Arch	13	87.3	702	11,568	705	
	East from Adit	18,336		Completed		18,336	0	Invert				0		
	West from Adit	13,902		Completed		13,902	0					11,568		
WINSTON BROTHERS	IRON MT. (E. PORTION)	(23,645)				(23,645)	(0)					0		
	East from Shaft	9,902	31	4.6	143	9,902	0	Arch	29	24.2	702	(702)	(22,943)	
	West from Shaft	13,743		Completed		13,743	0					702	22,943	
	IRON MT. (W. PORTION)	16,172		Completed		16,172	0	Arch	1	20.0	20	0	16,152	
	COXCOMB (From E. Portal)	17,795	78	7.4	581	17,413	382					0	17,795	
UTAH CONSTRUCTION CO.	E. EAGLE (From W. Portal)	9,442	58	8.9	516	8,675	767					0	9,442	
	W. EAGLE (E. PORTION)	(15,845)				(15,845)	(0)					0	(15,845)	
	East from Adit	7,871				7,871	0							
BRODERICK & GORDON	West from Adit	7,974				7,974	0							
	W. EAGLE (W. PORTION)	10,649		Completed		10,649	0	Arch	74	143.9	10,649	10,649	0	
L. E. DIXON & BENT BROS.	VALVERDE	(38,015)				(37,587)	(428)					0	0	
	East Portal to Shaft 3	21,415		Completed		21,415	0	Arch	87	39.9	3,474	22,190	15,825	
	West from Shaft 3	12,067		Completed		8,964	0	Invert	55	19.5	1,070	10,659	27,356	
	East from Adit	4,533	87	2.9	256	3,103	0							
	West from Adit	4,533		Completed		4,105	428							
DRAVO CONTRACTING CO.	TOTALS	181,556	254	5.9	1,496	179,979	1,577	Arch	130	42.8	4,898	51,300	130,256	
	Ft. Miles	(34.39)		(0.28)		(34.08)	(0.30)	Invert	152	133.1	17,194	26,783	154,773	

AQUEDUCT — FORCE ACCOUNT

EAST COACHELLA	East Portal to Fargo Adit	(96,605)	Completed			(96,605)	0			0
	West from Fargo Adit	32,130	Completed			32,130	0			0
	East from Berdoo Adit	31,024	Completed			31,024	0			0
	Berdoo Adit to West Portal	33,451	Completed			33,451	0			0
	1000 PALMS NO. 1 (From W.P.)	16,058	Completed			16,058	0			0
WIDE CANYON NO. 1	1000 PALMS NO. 2	3,838	Completed			3,838	0			0
	WIDE CANYON NO. 1	14,305	Completed			14,305	0			0
	WIDE CANYON NO. 2	4,810	Completed			4,810	0			0
	SEVEN PALMS (From E. Ptl)	11,920	Completed			11,920	0			0
	LONG CANYON (From W. Ptl)	15,295	Completed			15,295	0			0
BLIND CANYON	MORONGO NO. 1	6,848	Completed			6,848	0			0
	MORONGO NO. 2	5,711	Completed			5,711	0			0
	MORONGO NO. 3	(67,669)	Completed			(67,669)	0			0
	SAN JACINTO	8,653	Completed			8,653	0			0
	Coachon Shaft to East Portal	43,511	Completed			43,511	0			0
METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA	East from Coachon Shaft	93	Completed			93	0			0
	West from Potrero Shaft	93	Completed			93	0			0
	West from Potrero Shaft	93	Completed			93	0			0
	From West Portal	15,499	Completed			15,499	0			0
	TOTALS	245,722	Completed			245,722	0			0

Pushawalla Adit, and Berdoo
Aggregate plant,
East Coachella Tunnel—
Dist. Force Acct., John Austin.
Thousand Palms—
Dist. Force Acct.—
Lyle McMillen, Gen. Fore.
Wide Canyon—
Dist. Force Acct.—
Kenneth MacIsaac
Long Canyon—
Dist. Force Acct.—C. E. Sides
San Jacinto Tunnel, District Force
Account, C. R. Rankin, Gen. Supt.;
E. E. McCabe, W. L. Taylor, and
Frank Laird, Tunnel Supts.
Valverde Tunnel, Dravo Contr. Co.,
R. W. Kemp, Gen. Supt.; H. C.
Richardson, Asst. Gen. Supt.; Fred
Youmans, Tunnel Supt.; John Will,
Concrete Supt.
(Distribution Tunnels)
Monrovia tunnels, West Construc-
tion Co., H. E. Carleton, Gen. Supt.;
O. V. Humason, Peter Brisbols, and
Angus MacDonnell, Tunnel Supts.
Sierra Madre tunnel, J. F. Shea
Co., Inc., Edmund H. Shea, Supt.
Pasadena tunnel, San Rafael tun-
nels Nos. 1 and 2, and Monrovia
tunnel No. 4, L. E. Dixon Co., Bent
Bros., Inc., and Johnson, Inc., H. J.
King, Gen. Supt.; D. L. Simpson,
L. E. Bury and P. C. Guinn, Supts.
(Canal, Siphon, Conduit)
Schedules Nos. 1, A, 1B, 10, 10A,
10B, 11, 11A, 11B, 11C, 13, 13A, and
13B, Aqueduct Construction Co., C.
M. Elliott, Gen. Supt.; Charles Har-
lowe, Jr., Excav. Supt.; and Charles
Clapp, Supt. Siphon, and Charles
Schedules Nos. 2, 2A, 2B, 3, 3A,
3B, 7 and 7A, Barrett & Hill and
Macco Corp.; H. W. McKinley,
Supt.
Schedules Nos. 4, 4A, 5 and 5A,
Jahn & Bressi Construction Co., Jo-
seph Muscolo, Gen. Supt.; Domi-
nick Bressi, Asst. Gen. Supt.;
Schedules Nos. 6, 8, 8A and 8B,
Clyde W. Wood and M. J. Bevanda,
A. F. Wesner, Gen. Supt.; L. L.
Green, Excav. Supt.; A. V. Fisher,
and V. S. Price, Concrete Supts.
Schedules Nos. 9, 9A, 9B and 9C,
The Utah Construction Co., Ben Arp,
Gen. Supt.; E. C. Caldwell, Excav.
Supt.
Schedules Nos. 14, 15 and 16,
Thompson-Starrett Co., Inc., Rod-
ney Smith, Resident Engineer; Wil-
liam Hayes, Excav. Supt.; Thomas
Milverna, Concrete Supt.
Schedule 17, Dist. Force Acct., H.
Hjalmarson, Supt. (Pan Hill) and
P. J. Lynch, Supt. (Wide Siphon).
Schedule 18J, Morrison-Knudsen,
J. O. Young, Gen. Supt.
Schedules Nos. 18, 19, and 20, J.
F. Shea Co., Inc., H. F. Renne-
bohm, Supt.
Schedules Nos. 20A, 20B, 20C, 21,
22 and 23, The Griffith Co., Harry
Davis, Supt.
(Dams)
Cajalco dam, The Griffith Co.,
Rex B. Sawyer, Gen. Supt.
Parker dam, Six Cos., Inc., Perry
Yates, Gen. Supt.

DISTRIBUTION — CONTRACT									
TUNNELS		CANAL, CONDUIT AND SIPHON		CONCRETE—Feet		EXCAVATION—Feet		BACKFILL—Feet	
SCHED. NO.	CONTRACTOR	LENGTH IN MILES	FEATURES	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE
1	WEST CONSTRUCTION CO.	86	MONROVIA NO. 1 (From W.P.)	1,370	15,885	1,370	15,885	1,835	7,235
2		86	MONROVIA NO. 2 (From Jct. 1)	1,300	19,253	1,300	19,253	1,800	2,850
3		84	MONROVIA NO. 3 (From Adit)	0	37,054	0	37,054	0	0
4		87	MONROVIA NO. 4 (From W.P.)	1,600	38,975	1,600	38,975	0	0
5		88	MONROVIA NO. 5 (From W.P.)	820	53,588	820	53,588	0	0
6		15.540	MONROVIA NO. 6 (From W.P.)	2,460	6,770	2,460	6,770	0	0
7		27.727	MONROVIA NO. 7 (From W.P.)	140	27,707	140	27,707	0	0
8		49.579	MONROVIA NO. 8 (From W.P.)	389	49,579	389	49,579	0	0
9		47.404	MONROVIA NO. 9 (From W.P.)	1,780	34,610	1,780	34,610	0	0
10		44.505	MONROVIA NO. 10 (From W.P.)	4,655	43,850	4,655	43,850	0	0
11		44.507	MONROVIA NO. 11 (From W.P.)	0	0	0	0	0	0
12		33.446	MONROVIA NO. 12 (From W.P.)	951	28,002	951	28,002	0	0
13		33.270	MONROVIA NO. 13 (From W.P.)	2,290	2,830	2,290	2,830	0	0
14		32.366	MONROVIA NO. 14 (From W.P.)	50	21,476	50	21,476	0	0
15		35.849	MONROVIA NO. 15 (From W.P.)	0	0	0	0	0	0
16		19.359	MONROVIA NO. 16 (From W.P.)	903	7,758	903	7,758	0	0
17		22.119	MONROVIA NO. 17 (From W.P.)	1,070	2,375	1,070	2,375	0	0
18		27.564	MONROVIA NO. 18 (From W.P.)	455	8,180	455	8,180	0	0
19		37.464	MONROVIA NO. 19 (From W.P.)	0	0	0	0	0	0
20		18.618	MONROVIA NO. 20 (From W.P.)	0	0	0	0	0	0
20 A & B		735	MONROVIA NO. 20 A & B (From W.P.)	0	705	0	705	0	0
21		14.613	MONROVIA NO. 21 (From W.P.)	1,573	14,073	1,573	14,073	0	0
22		7.229	MONROVIA NO. 22 (From W.P.)	964	27,664	964	27,664	0	0
23		38.699	MONROVIA NO. 23 (From W.P.)	22,770	458,952	22,770	458,952	0	0
TOTALS		760.653		53,035	358,906	53,035	358,906	10,982	316,788

COMPLETED FEATURES									
TUNNELS		CANAL, CONDUIT AND SIPHON		CONCRETE—Feet		EXCAVATION—Feet		BACKFILL—Feet	
SCHED. NO.	CONTRACTOR	LENGTH IN MILES	FEATURES	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE
1	MECCA PASS Nos. 1, 2 & 3	1.13	CONDUIT AND SIPHONS	1,370	15,885	1,370	15,885	1,835	7,235
2	WHITEWATER Nos. 1 & 2	1.94	CONDUIT AND SIPHONS	1,300	19,253	1,300	19,253	1,800	2,850
3	HAYFIELD No. 2	1.03	CANAL AND SIPHONS	0	37,054	0	37,054	0	0
4	BERNASCONI	7.27-35	CANAL AND SIPHONS	1,600	38,975	1,600	38,975	0	0
5	COTTONWOOD	11-21-35	CANAL AND SIPHONS	820	53,588	820	53,588	0	0
6	HAYFIELD No. 1	1.84	CANAL AND SIPHONS	2,460	6,770	2,460	6,770	0	0
7		10.93	CANAL AND SIPHONS	140	27,707	140	27,707	0	0
8		49.579	CANAL AND SIPHONS	389	49,579	389	49,579	0	0
9		47.404	CANAL AND SIPHONS	1,780	34,610	1,780	34,610	0	0
10		44.505	CANAL AND SIPHONS	4,655	43,850	4,655	43,850	0	0
11		44.507	CANAL AND SIPHONS	0	0	0	0	0	0
12		33.446	CANAL AND SIPHONS	951	28,002	951	28,002	0	0
13		33.270	CANAL AND SIPHONS	2,290	2,830	2,290	2,830	0	0
14		32.366	CANAL AND SIPHONS	50	21,476	50	21,476	0	0
15		35.849	CANAL AND SIPHONS	0	0	0	0	0	0
16		19.359	CANAL AND SIPHONS	903	7,758	903	7,758	0	0
17		22.119	CANAL AND SIPHONS	1,070	2,375	1,070	2,375	0	0
18		27.564	CANAL AND SIPHONS	455	8,180	455	8,180	0	0
19		37.464	CANAL AND SIPHONS	0	0	0	0	0	0
20		18.618	CANAL AND SIPHONS	0	0	0	0	0	0
20 A & B		735	CANAL AND SIPHONS	0	705	0	705	0	0
21		14.613	CANAL AND SIPHONS	1,573	14,073	1,573	14,073	0	0
22		7.229	CANAL AND SIPHONS	964	27,664	964	27,664	0	0
23		38.699	CANAL AND SIPHONS	22,770	458,952	22,770	458,952	0	0
TOTALS		10.93		53,035	358,906	53,035	358,906	10,982	316,788

CANAL, CONDUIT AND SIPHON									
TUNNELS		CANAL, CONDUIT AND SIPHON		CONCRETE—Feet		EXCAVATION—Feet		BACKFILL—Feet	
SCHED. NO.	CONTRACTOR	LENGTH IN MILES	FEATURES	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE
1	MECCA PASS Nos. 1, 2 & 3	1.13	CONDUIT AND SIPHONS	1,370	15,885	1,370	15,885	1,835	7,235
2	WHITEWATER Nos. 1 & 2	1.94	CONDUIT AND SIPHONS	1,300	19,253	1,300	19,253	1,800	2,850
3	HAYFIELD No. 2	1.03	CANAL AND SIPHONS	0	37,054	0	37,054	0	0
4	BERNASCONI	7.27-35	CANAL AND SIPHONS	1,600	38,975	1,600	38,975	0	0
5	COTTONWOOD	11-21-35	CANAL AND SIPHONS	820	53,588	820	53,588	0	0
6	HAYFIELD No. 1	1.84	CANAL AND SIPHONS	2,460	6,770	2,460	6,770	0	0
7		10.93	CANAL AND SIPHONS	140	27,707	140	27,707	0	0
8		49.579	CANAL AND SIPHONS	389	49,579	389	49,579	0	0
9		47.404	CANAL AND SIPHONS	1,780	34,610	1,780	34,610	0	0
10		44.505	CANAL AND SIPHONS	4,655	43,850	4,655	43,850	0	0
11		44.507	CANAL AND SIPHONS	0	0	0	0	0	0
12		33.446	CANAL AND SIPHONS	951	28,002	951	28,002	0	0
13		33.270	CANAL AND SIPHONS	2,290	2,830	2,290	2,830	0	0
14		32.366	CANAL AND SIPHONS	50	21,476	50	21,476	0	0
15		35.849	CANAL AND SIPHONS	0	0	0	0	0	0
16		19.359	CANAL AND SIPHONS	903	7,758	903	7,758	0	0
17		22.119	CANAL AND SIPHONS	1,070	2,375	1,070	2,375	0	0
18		27.564	CANAL AND SIPHONS	455	8,180	455	8,180	0	0
19		37.464	CANAL AND SIPHONS	0	0	0	0	0	0
20		18.618	CANAL AND SIPHONS	0	0	0	0	0	0
20 A & B		735	CANAL AND SIPHONS	0	705	0	705	0	0
21		14.613	CANAL AND SIPHONS	1,573	14,073	1,573	14,073	0	0
22		7.229	CANAL AND SIPHONS	964	27,664	964	27,664	0	0
23		38.699	CANAL AND SIPHONS	22,770	458,952	22,770	458,952	0	0
TOTALS		10.93		53,035	358,906	53,035	358,906	10,982	316,788

COMPLETED FEATURES									
TUNNELS		CANAL, CONDUIT AND SIPHON		CONCRETE—Feet		EXCAVATION—Feet		BACKFILL—Feet	
SCHED. NO.	CONTRACTOR	LENGTH IN MILES	FEATURES	PERIOD	TO DATE	PERIOD	TO DATE	PERIOD	TO DATE
1	MECCA PASS Nos. 1, 2 & 3	1.13	CONDUIT AND SIPHONS	1,370	15,885	1,370	15,885	1,835	7,235
2	WHITEWATER Nos. 1 & 2	1.94	CONDUIT AND SIPHONS	1,300	19,253	1,300	19,253	1,800	2,850
3	HAYFIELD No. 2	1.03	CANAL AND SIPHONS	0	37,054	0	37,054	0	0
4	BERNASCONI	7.27-35	CANAL AND SIPHONS	1,600	38,975	1,600	38,975	0	0
5	COTTONWOOD	11-21-35	CANAL AND SIPHONS	820	53,588	820	53,588	0	0
6	HAYFIELD No. 1	1.84	CANAL AND SIPHONS	2,460	6,770	2,460	6,770	0	0
7		10.93	CANAL AND SIPHONS	140	27,707	140	27,707	0	0
8		49.579	CANAL AND SIPHONS	389	49,579	389	49,579	0	0
9		47.404	CANAL AND SIPHONS	1,780	34,610	1,780	34,610	0	0
10		44.505	CANAL AND SIPHONS	4,655	43,850	4,655	43,850	0	0
11		44.507	CANAL AND SIPHONS	0	0	0	0	0	0
12		33.446	CANAL AND SIPHONS	951	28,002	951	28,002	0	0
13		33.270	CANAL AND SIPHONS	2,290	2,830	2,290	2,830	0	0
14		32.366	CANAL AND SIPHONS	50	21,476	50	21,476	0	0
15		35.849	CANAL AND SIPHONS	0	0	0	0	0	0
16		19.359	CANAL AND SIPHONS	903	7,758	903	7,758	0	0
17		22.119	CANAL AND SIPHONS	1,070	2,375	1,070	2,375	0	0
18		27.564	CANAL AND SIPHONS	455	8,180	455	8,180	0	0
19		37.464	CANAL AND SIPHONS	0	0	0	0	0	0
20		18.618	CANAL AND SIPHONS	0	0	0	0	0	0
20 A & B		735	CANAL AND SIPHONS	0	705	0	705	0	0
21		14.613	CANAL AND SIPHONS	1,573	14,073	1,573	14,073	0	0
22		7.229	CANAL AND SIPHONS	964	27,664	964	27,664	0	0
23		38.699	CANAL AND SIPHONS	22,770	458,952	22,770	458,952	0	0
TOTALS		10.93		53,035	358,906	53,035	358,906	10,982	316,788

Death Closes Career of Dr. Elwood Mead

Dr. Elwood Mead, commissioner of the U. S. Bureau of Reclamation since 1924, died at his home in Washington, D. C., on January 26 after an illness of about one week. He had celebrated his 78th birthday on January 16.

Dr. Mead was closely identified with the development of the West for more than half a century as an expert on reclamation problems, and was well known to scores of men connected with the Colorado River Aqueduct both personally and through his active interest in the project.

He was born at Patriot, Indiana, in 1858, and was graduated from Purdue University in 1882 with the degree of bachelor of science. In 1884 he received a degree of master of science from the same university. He was later recipient of a degree in civil engineering from Iowa State College in 1904 and in 1925 was made a doctor of laws by the University of Michigan.

Dr. Mead was a member and past director of the American Society of Civil Engineers, a member of the American Society of Agricultural Engineers, and the British Institute of Civil Engineers.

In addition to many years of distinguished service in various branches of the Federal Government, Dr. Mead's career included periods of teaching at Colorado Agricultural College and the University of California; service as territorial engineer and state engineer in Wyoming; the chairmanship of the State Rivers and Water Supply Commission of Victoria, Australia; service in an advisory and consulting capacity in Palestine, Cuba, Haiti, New South Wales, Canada, Hawaii, Java, and Mexico.

San Jacinto Lining Work To Be Started

Preparing for the launching of a new phase of the San Jacinto job, the District will receive bids February 28 for furnishing 49 steel batch car bodies to be used in connection with the concreting of the tunnel.

Lining operations will be started shortly following holing through between Potrero shaft and the West portal. Pumpcrete units have been ordered for the job and work has been started on a batching plant near the West Portal.



Sam Freedman of the Thompson-Starrett Company contributes this poignant little record of the trials and tribulations of the embattled rodman on the aqueduct.

Excavation Work on Valverde Near Completion

The completion of excavation on another major tunnel of the Colorado River Aqueduct was in sight this week as February 1 progress reports from Valverde showed that only 428 feet of the 38,015-foot bore remained.

Most westerly of the tunnels of the main line of the aqueduct, the Valverde bore is being driven under a contract held by the Dravo Contracting Company, with R. W. Remp as general superintendent.

The remaining 428 feet lies at the extreme western end of the tunnel, and is being driven from an adit. Excavation on the tunnel also was carried forward from three vertical shafts.

In addition to the excavation which has been completed, February 1 progress figures reveal that a substantial amount of concrete lining has been placed. Of the arch 58.7 per cent has been completed, or a total of 22,334 feet. Approximately 29 per cent of the invert has been placed, or a total of 11,047 feet.

If the present rate of progress is maintained on the job, it is indicated that the tunnel will be completed and ready to turn over to the Metropolitan Water District this coming autumn. The total contract price for the job was \$3,198,947. The contract was awarded on April 7, 1933.

Pasadena Tunnel Excavation Near End

Another aqueduct tunnel on which excavation is nearing completion is the Pasadena bore of the distribution system on which only 855 feet remained to be driven as of February 1.

Being constructed by L. E. Dixon, Bent Bros. & Johnson, Inc., the entire length of the tunnel is 17,744 feet, including 12,140 feet under the original contract and a 5,604-foot extension beyond the east end of the original contract. The price of the original contract was \$621,180 and the extension was contracted for \$204,475.

Very rapid progress has been made on excavation of the tunnel, several new records having been established during the course of the job.

In preparation for the launching of work on the placement of concrete lining in the tunnel, Dixon-Bent-Johnson crews have started work on the concrete plant which will be located at the west portal of the tunnel, near the Rose Bowl in the Arroyo Seco.

The Pasadena bore is unique among the aqueduct bores in that it passes directly under a heavily populated section. For a considerable portion of its length it is under Mountain street, one of Pasadena's principal thoroughfares. Its depth varies from 30 to 100 feet.

NEWS FROM FIELD AND OFFICE

An inadvertent printer's slip-up on one word in the second sentence of the second paragraph of the aqueduct haulage story on page 3 of the last issue of the NEWS changed the entire meaning of the sentence. What read "District records reveal that *such* transportation . . ." should have been "District records reveal that *truck* transportation . . ." In case anyone read the item carefully enough to note the error, this correction will set the records straight.

* * * *

Henry ("Hank") Mills, formerly resident engineer of the Cottonwood and Mecca Pass tunnels on Division 4 has been transferred to the Pasadena tunnel job on the aqueduct distribution system, where he will supervise the placement of concrete lining.

* * * *

According to reports from Division 4, barnyard golf has become the consuming interest to a large number of the residents of Berdoo Camp. A horseshoe pitching court has been leveled off. Lights and three long benches have been installed, and almost every night there are two games going, with the bleachers filled.

* * * *

Miss Miriam Taylor, formerly secretary to A. L. Gram, executive secretary of the Board of Directors, has been transferred to the office of Assistant Controller J. M. Luney. She will act as secretary to Mr. Luney.

* * * *

J. M. Gaylord, chief electrical engineer of the District will speak before the Southern California Chapter of the American Society of Civil Engineers on February 12 at the University Club. Mr. Gaylord will discuss the aqueduct pumping plants.

* * * *

The Los Angeles Times recently called attention to the fact that the Metropolitan Water District held first place for the week ending January 30, as the leading project of the Far West in creating demand for steel products.

* * * *

Eric Bladholm, junior engineer in the Electrical-Mechanical Division, has resigned his position to accept a post with the Department of Water and Power of the City of Los Angeles.

* * * *

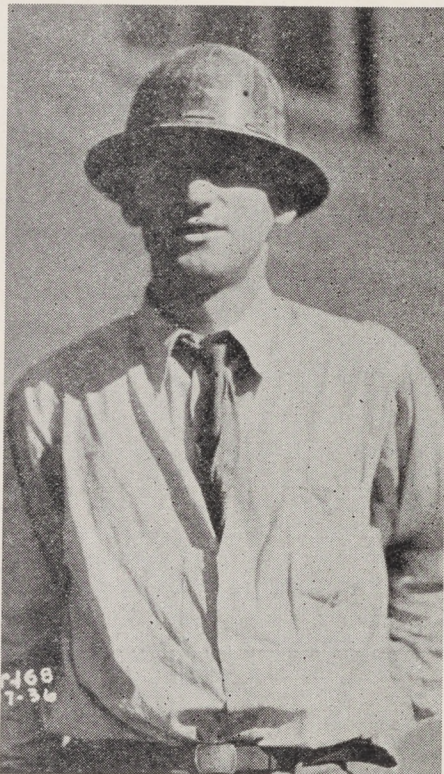
Enrollment in the Parker Dam school has passed the 200 mark and the school now has a faculty of six, the last to be added being Ralph Sanders who is teacher for the Fifth and Sixth grades.

AQUEDUCT TEMPERATURES

January 15 to 31, 1936

	Max.	Min.
Div. 1.....	74°	34°
Div. 2.....	74°	39°
Div. 3.....	75°	36°
Div. 4.....	74°	41°
Divs. 5 & 6.....	79°	32°

Ezra Rider was the speaker of the evening at the January 31 meeting of the Esquire Club of the Wilshire Presbyterian Church. Ezra's subject, as may be imagined, was the aqueduct. President of the Esquires is none other than Duke MacConaghy of the District Purchasing Department.



If the dignity of the NEWS permitted it to stoop to puns, this picture might be captioned "The One Hoss Shea." But such a title would be both undignified and inaccurate, since the handsome gent above is none other than Ed Shea, superintendent on the Sierra Madre tunnel job, and there is nothing one-hoss about him or his tunnel. In fact, it appears that when bigger and better tunnel driving records are set, Ed and his boys will set 'em. On January 20 they out-gophered the Pasadena tunnel boys by driving 74 feet in two shifts—43 feet in one shift and 31 in the other. During the week ending January 25 they pushed the hole ahead a total of 365 feet.

Charles Clapp of the Aqueduct Construction Company reports what sounds like a new record of some sort: "On Schedule 1 up to February 1 we have had 77 consecutive pours on the concrete arch, having worked every day including Sundays except the four-day shut-down over Christmas."

* * * *

The Metropolitan Water District was well represented January 31 and February 1 at the convention of the American Geophysical Society, held on the campus of California Institute of Technology in Pasadena. Among those attending were Director Franklin Thomas, C. C. Elder, A. L. Gram, and W. W. Aultman.

* * * *

Crews of the Fox Movietone News and Paramount News spent a day last week photographing construction activity on the Cajalco dam and reservoir job. The pictures will be released in Southern California theaters within a short time.

* * * *

Winston Updegraf, editor of the magazine "Western City," and S. G. Parrish, member of the city council of South Pasadena, spent three days along the aqueduct line last week. They inspected construction work from Parker Dam to Cajalco Reservoir.

* * * *

Winston Brothers celebrated the holing through of the East Portal of Iron Mountain tunnel with a large turkey dinner with all the trimmings. The \$96 prize in the holing through pool was won by Joe Tulley, cagetender.

* * * *

Warren Wood of the Operating Division has been transferred to the Boulder Dam-Aqueduct power transmission line under C. P. Weaver.

* * * *

Samuel F. Dibble, formerly of the Personnel & Purchasing Divisions of the District, and well known to scores of aqueduct employees, has been appointed secretary-manager of the Beverly Hills Chamber of Commerce.

* * * *

Junior Engineer Hubbell Carpenter, formerly of the Banning Testing Laboratory, has been transferred to the Boulder-Aqueduct transmission line.

* * * *

Henry O. Walker has resigned his position as office engineer on Division 5 to accept a position in Tacoma, Washington.

Tragic Fire Takes 8 Lives at Parker

Fire, which took the lives of seven men and seriously burned two others, destroyed a dormitory and the mess hall and commissary of Six Companies, Inc., on the Parker Dam job early on the morning of February 3.

The tragic blaze, which started from an undetermined source, was discovered at about 2:30 in the morning. More than 100 men were sleeping in the dormitory building. In addition to those who sustained fatal and serious burns, several others received minor burns and injuries.

Those who died in the fire were Harold Herman, Joe Peterson, Otto Doran, Frank Lewis, Albert Johnson, Hans Evans, John Swanson, and one unidentified man. The first four named were employees of Anderson Brothers Supply Company, subcontractors engaged in feeding and housing the men employed by Six Companies. Albert Johnson formerly was employed at East Iron Mountain, but at the time of the fire was a visitor in the camp. The other three men also were visitors and not employed on the work.

Pump Plant Digging Reported Well Under Way

Advices from Division 1 revealed last week that crews of Winston Brothers & Wm. C. Crowell are well under way with excavation for the Intake and Gene pumping plants, the first two of the aqueduct's five pumping stations on which work has been started.

At the intake, excavation for the pump house, control room, and the lower end of the delivery pipes has been carried down to approximately 15 feet below the level of the motor floor. Below this elevation the formation is well cemented and progress has been slower. The digging of a diagonal ditch to intercept the hillside drainage above the plant is 50 per cent completed. Grading for the 230-kv switch rack is half done, the remainder being fill to be obtained from the excavation of the other structures.

Field Clerk K. O. Matson is now rated as storekeeper on Division 5.

Holing Thru Party Nets \$400 For Hospital

G. J. Willson of Berdoo Camp has announced that approximately \$400 have been made available for the benefit of the Berdoo Hospital from funds secured through the sale of tickets to the East Coachella Tunnel dance and entertainment January 2.

The announcement states that this sum was made available after all expenses had been paid, including the prize money paid to the three winners of the holing through pool.

PUMPS

(Continued from Page 3)

being connected to a steel delivery pipe leading to the continuation of the aqueduct at the top of the pump lift. The delivery pipes will be about 10 feet in diameter and from about 800 to 2,000 feet long.

The delivery lines at the Intake, Gene, and Eagle Mountain plants, discharge into pressure tunnels or conduits, and at the junction of the delivery lines with the conduit surge chambers will be constructed to absorb the oscillations resulting from a sudden shutdown of the pumps. At the Iron Mountain and Hayfield plants, the delivery lines discharge into gravity flow tunnels and surge chambers are not required. At the Gene plant the intake to the pumps is through a considerable length of closed pressure conduit, and a surge chamber will be provided close to the pump inlet.

Each delivery pipe will have a shut-off gate at its upper end so that any one of them may be taken out of service for inspection and maintenance. Valves at the inlet and discharge of each pump will permit any pump to be shut down and the pump casing emptied, without interfering with the operation of adjacent units. The controls for all the pumping apparatus in each plant will be centralized in a separate room. A system of indicators will keep the operator fully informed as to the operation of the equipment.

Participation In M.W.D. Aqueduct Investigated

Official inquiry from the City of San Diego regarding the possibility of San Diego participating in the Colorado River Aqueduct project was received last Friday by the Metropolitan Water District board of directors.

The letter, signed by City Manager R. W. Flack, referred to a recent inspection trip made along the aqueduct by a group of San Diego officials, taken, he states, "in order to reach a better mutual understanding of the problems of each the District and the City, in the event that it is found practicable and economical for the City of San Diego to bring its Colorado River water to the Coastal area by way of the Colorado River Aqueduct."

Information Sought

The communication asked for "information regarding the possibility and cost of bringing the city of San Diego's 155 cubic feet per second of Colorado River water through the Colorado River Aqueduct now under construction by the Metropolitan Water District of Southern California" for the purpose of "determining the most practical and economical route for the City to use in bringing its water to the city."

Three Alternatives

City Manager Flack pointed out that it is indicated that if the City of San Diego's water can be brought through the aqueduct it could be diverted near the east end of the Lakeview siphon and carried by means of a gravity line 85 miles long by way of Railroad Canyon, Temecula and Escondido to the City's projected San Vicente reservoir.

The city manager's letter requested detailed information regarding engineering details, costs, and legal aspects of three alternative plans for possible participation by San Diego in the aqueduct project.

The three plans, as outlined by Mr. Flack, were: "First, whereby the City would join the District as a member city; second, whereby the City would secure a permanent right to bring its Colorado River water through the District's aqueduct; and third, whereby the City would secure a temporary right to bring its Colorado River water through the District's aqueduct, pending the full requirement of the capacity by the District or the earlier completion of an independent aqueduct by the city."